

Converting Alternative Fuel Units to Gasoline Gallon Equivalents (GGE)

Every fuel has different energy density. The most common way to measure how much petroleum is displaced through the use of an alternative fuel is to convert the energy density of an alternative fuel unit to the energy density in a gasoline gallon.

The table below lists the GGE calculation for each alternative fuel. To perform a conversion, choose the GGE calculation for the appropriate fuel type. Next, drop the number of fuel units used into the equation, and multiply that number by the proper conversion factor.

Example

If you used 115 gallons of B20, the equation would be: $115 \text{ gal B20} \times 1.126 = 129.49 \text{ GGE}$

| Alternative Fuel Conversion Factors to GGE | | | |
|--|--------------------------------------|----------------------|--|
| Fuel Type | Fuel Measurement Unit | Conversion Factor | GGE Calculation |
| B100 | gallons | 1.015 | $\text{GGE} = \text{B100 gal} \times 1.015$ |
| B20 | gallons | 1.126 | $\text{GGE} = \text{B20 gal} \times 1.126$ |
| CNG | gallons at 2400 psi | 0.18 | $\text{GGE} = \text{CNG gal (at 2400 psi)} \times 0.18$ |
| CNG | gallons at 3600 psi | 0.27 | $\text{GGE} = \text{CNG gal (at 3600 psi)} \times 0.27$ |
| CNG | gallons at 3000 psi | 0.225 | $\text{GGE} = \text{CNG gal (at 3000 psi)} \times 0.225$ |
| CNG | hundred cubic feet | 0.83 | $\text{GGE} = \text{CNG ccf} \times 0.83$ |
| Diesel | gallons | 1.147 | $\text{GGE} = \text{Diesel gal} \times 1.147$ |
| E-85 | gallons | 0.72 | $\text{GGE} = \text{E-85 gal} \times 0.72$ |
| Electric | kWh | 0.03 | $\text{GGE} = \text{Ele kWh} \times 0.03$ |
| Gasoline | gallons | No conversion needed | $\text{GGE} = \text{Gasoline gal}$ |
| Hydrogen | kg | 1 | $\text{GGE} = \text{H2 kg} \times 1$ |
| LNG | gallons @ 14.7psi and -234 degrees F | 0.66 | $\text{GGE} = \text{LNG gal} \times 0.66$ |
| LPG | gallons | 0.74 | $\text{GGE} = \text{LPG gal} \times 0.74$ |